

Sub B1  
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1. **(Once Amended)** A semiconductor laser device, comprising:  
a doped semiconductor cladding layer;  
an undoped semiconductor optical confinement layer;  
an undoped semiconductor spacer layer positioned between said cladding layer and said  
optical confinement layer and in contact with both said cladding layer and said optical  
confinement layer;  
a light-generating layer disposed over said optical confinement layer; and  
a first electrode and second electrode for supplying an electrical current to said light  
generating layer.

2. **(Once Amended)** The laser device of claim 1, wherein said undoped spacer layer has  
a thickness which is less than the thickness of said cladding layer and which is more than about  
4 nm.

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12. **(Once Amended)** A semiconductor laser device, comprising:  
a semiconductor substrate;  
an n-doped semiconductor lower cladding layer;  
an undoped semiconductor lower optical confinement layer;  
an undoped semiconductor spacer layer between said lower cladding layer and said lower  
optical confinement layer and in contact with both said cladding layer and said optical  
confinement layer;  
a semiconductor active layer for generating light;  
a semiconductor upper optical confinement layer;  
0 a p-doped semiconductor upper cladding layer; and  
electrodes for current injection to said device.

13. **(Once Amended)** The laser device of claim 12, wherein said undoped spacer layer  
has a thickness which is less than the thickness of said cladding layer and which is more than  
about 4 nm.

20. **(Once Amended)** A method of making a semiconductor laser device, comprising the steps of:

forming an n-doped semiconductor lower cladding layer on a substrate;

forming an undoped semiconductor spacer layer over said lower cladding layer and in

5 contact therewith;

forming an undoped semiconductor optical confinement layer over said spacer layer and

93 in contact therewith;

forming an active, light emitting semiconductor layer over said optical confinement layer,

and

10 forming a first electrode and a second electrode for supplying an electrical current to said active, light emitting semiconductor layer.

24 28. **(Once Amended)** The laser device of claim 20, wherein said undoped spacer layer has a thickness which is less than the thickness of said cladding layer and which is more than about 4 nm.

Sub B3 29. **(Once Amended)** A semiconductor device comprising:  
a first III - V semiconductor layer formed by MOCVD of n-doped semiconductor material,  
a III - V semiconductor spacer layer formed by MOCVD of undoped semiconductor  
5 material deposited directly on said first III - V semiconductor layer,  
a second III - V semiconductor layer formed by deposition of undoped semiconductor material directly on said spacer layer, whereby lattice defects caused by said first III - V semiconductor layer are mitigated by said spacer layer, and  
a first electrode and second electrode for sending an electrical current through said III-V  
10 semiconductor layers.

30. **(Once Amended)** A method of making a III – V semiconductor device, comprising the steps of:

5 depositing a layer of a III – V semiconductor compound doped with selenium using MOCVD;

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cont. depositing a spacer layer of an undoped III – V semiconductor compound directly on said selenium-doped layer using MOCVD;

depositing an undoped layer comprising one or more III – V semiconductor compounds directly on said spacer layer, and

0 forming a first electrode and second electrode for sending an electrical current through said layers.

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Please add New Claims 31-43:

Q5 31. **(New)** The method of Claim 30 wherein the first layer and the spacer layer are deposited by a single MOCVD process which is interrupted for a period of time after the layer of selenium-doped III – V semiconductor compound is deposited and before the spacer layer is deposited.

32. **(New)** The semiconductor laser device of Claim 1 wherein said optical confinement layer comprises a quaternary compound material.

33. **(New)** The method of Claim 20 wherein said optical confinement layer comprises a quaternary compound material.

Sub by 34. **(New)** The semiconductor device of Claim 29 wherein said optical confinement layer comprises a quaternary compound material.

35. **(New)** The semiconductor device of Claim 30 wherein said optical confinement layer comprises a quaternary compound material.

Sub B6

36. (New) A semiconductor laser device, comprising:  
a doped semiconductor cladding layer;  
a semiconductor optical confinement layer; and  
an undoped semiconductor spacer layer positioned between the cladding layer and the optical confinement layer, the spacer layer comprising a strain compensated superlattice layer.

5 37. (New) A semiconductor laser device, comprising:  
a doped semiconductor cladding layer;  
a semiconductor optical confinement layer comprising a quaternary compound;  
an undoped semiconductor spacer layer positioned between said cladding layer and said optical confinement layer;  
a light-generating layer disposed over said optical confinement layer; and  
a first electrode and second electrode for supplying an electrical current to said light generating layer.

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cont.

38. (New) The laser device of claim 37, wherein said undoped spacer layer has a thickness which is less than the thickness of said cladding layer and which is more than about 4 nm.

39. (New) The laser device of claim 37 wherein the n-doping material in said cladding layer is selenium.

40. (New) The laser device of claim 37 wherein said undoped spacer layer consists of a single layer of quaternary material having a bandgap-wavelength in the range of 0.92  $\mu\text{m}$  – 1.1  $\mu\text{m}$ .

41. (New) The laser device of claim 37 wherein said undoped spacer layer consists of a graded composition layer of quaternary material having a bandgap in the range of 0.92  $\mu\text{m}$  – 1.1  $\mu\text{m}$ .